

(3 Hours)

[ Total Marks : 70 ]

N.B. : (1) All questions are compulsory

1. (a) \_\_\_\_\_ no of ATP are synthesized in  $\beta$  oxidation of Palmitic acid. 1
- (b) Draw the structure of 2 purine bases of DNA. 1
- (c) Name the initiation codon and its respective amino acid. 1
- (d) Define 'Glycolysis' and write the role of phospho fructokinase in glycolysis. 2
- (e) Name the enzyme used in conversion of pyruvic acid to ethanol. 2
- (f) Name two drugs used to decrease serum cholesterol level. 2
- (g) Name any two diseases due to disorders of pyrimidine metabolism. 2
- (h) What is telomerase name any two drugs inhibiting the same. 2
- (i) What is promoter region name any two promoter regions in eucaryotic cells. 2
2. (a) Give the names and structures of the substrates and products of the following enzyme reaction (any two) 4
  - (i) Pyruvate dehydrogenase.
  - (ii) Lactate dehydrogenase.
  - (iii) HMG CoA lyase.
- (b) Write the name of enzyme catalyzing following reaction. 4
  - (i) Fructose to fructose 6-phosphate
  - (ii) Inosine monophosphate to xanthosine monophosphate
  - (iii)  $\alpha$ -D-Glucose-6 phosphate to D-Fructose-6-phosphate.
  - (iv) Acyl-carnitine to Acyl-CoA
- (c) Describe multiprotein complexes in Electron transport chain. 3
3. (a) Describe Energy investment phase and splitting phase of EMP pathway. 4
- (b) Write the types and specific functions of DNA polymerase in eucaryotic cell. 4
- (c) Explain ketone body synthesis. 3
4. (a) Explain post transcriptional modifications in eucaryotic cell. 4
- (b) Write the reactions and enzymes involved in synthesis of AMP and GMP using IMP. 4
- (c) Explain reactions of  $\beta$  oxidation occurring in mitochondrial matrix. 3
5. (a) Describe the process of DNA Sequencing by sanger's method. 4
- (b) Explain the process of solid phase peptide synthesis. 4
- (c) Explain - Glyoxylate shunt. 3
6. (a) Write note on DNA polymorphism. 3
- (b) Draw the salvage pathway for purine nucleotide biosynthesis. 3
- (c) Differentiate between oxidative and substrate level phosphorylation. 3
- (d) Enlist the protein synthesis inhibitors which are used as drugs. 2